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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

DINH, DUC Q

ART UNIT PAPER NUMBER

2629

DATE MAILED: 04/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/672,316 | Applicant(s) KUMAR VENKATACHALAM, HARI HARA | |
| | Examiner DUC Q. DINH | Art Unit 2629 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is Response to the Preliminary Amendment filed on January 26, 2004. Claims 1-20 are pending in the Application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1-2, 4-5, 8, 13,18 and 19 are rejected under 35 U.S.C. 102(a) as being anticipated by Yasukawa et al. (U.S Patent No 6,320,559), hereinafter Yasukawa.

In reference to claims 1, Yasukawa discloses in Figs 1-2 a pair of data-specs (display 2 has a spectacles like frame 101), comprising:

a pair of spectacles (display 2 has a spectacles like frame 101) adapted to be worn on the face of a person (operator 1); and

a projection unit (display panel 102 and enlarging lens 120 of display 2) coupled to the spectacles (display 2 has a spectacles like frame 101), the projection unit adapted to display data received from an information source (3) [the computer 3 is disposed under the desk 7 to transmit information source to the display device 2; col. 10, lines 63- col. 11, lines 1-3].

In reference to claim 2, Yasukawa discloses the information source is a computer, and the projection unit is adapted to display data from the computer (the computer 3 is disposed under the desk 7 to transmit image display information to the display device 2; col. 10, lines 63- col. 11, lines 1-3).

In reference to claim 4, Yasukawa discloses the display (2, Fig. 2 and Fig 5) further comprising a motion sensor 107 (sensor 107 detect the movement of the use head; col. 12, lines 23-26) and a controller (105; Fig. 5), the controller is adapted to receive an input from the motion sensor (107) and responsive to enable a receiver of the projection unit (display panel 102 receive information source from computer and the CPU 132 checks whether or not the output of the sensor 107 has changed, and if it changes when the operator moves his or her head, computes an address required to display a screen within the display frame 51 according to the change in angle to output it to the image memory 104. The display panel 102 displays the image data. In this manner, the operator can view a large number of virtual subscreen 5 by moving his head, i.e. the controller 105 receives input from motion sensor 107 that detects the movement of operator's head to enable the display 102 to display plurality of virtual subscreens 5 as shown in Fig. 3; col. 12, lines 10-32).

In reference to claim 5 Yasukawa discloses the projection unit is capable of wired communication with the information source (image display information sent from the computer 3 via the connection cord 106 is decoded by the drive circuit 105 and displayed on the liquid crystal panel 102; col. 11, lines 16-18).

In reference to claim 8, Yasukawa discloses the projection unit is adapted to display data, received from the information source on a virtual screen (virtual screen 5 in Fig. 1; when looking somewhat upward, the operator 1 can view a display screen on the liquid crystal panel 102 as a virtual subscreen 5 on a virtual display screen 6 at a distance about 0.5 m to 1.0 m apart from the operator; col. 11, lines 49-51).

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In reference to claim 13, Yasukawa discloses the projection unit is configured to receive power from the information source via connection cord 106 (a single cord can be used to supply power to the image display device as well as to transmit image display information to the same device; col. 8, lines 26-29).

In reference to claim 18, Yasukawa discloses a method of forming a wearable device (2) in Fig. 1 that displays data from an information source (computer 3), the method comprising:

providing a pair of spectacles (display device 2 has a spectacles like frame 101) adapted to be worn on the face of a person (operator 1); and

coupling a projection (display panel 102 and enlarging lens 120 of display 2) unit to the pair of spectacles, the projection unit adapted to display data received from an information source (computer 3 providing display data to the display 2; col. 10, lines 67-col.11, line 2).).

In reference to claim 19, Yasukawa discloses the projection unit is capable of wired communication with the information source (the computer 3 is disposed under the desk 7 to transmit image display information to the display device 2 via a connection cord 106; col. 10, lines 63- col. 11, lines 1-3).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6, 9-10, 12, 15-16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasukawa.

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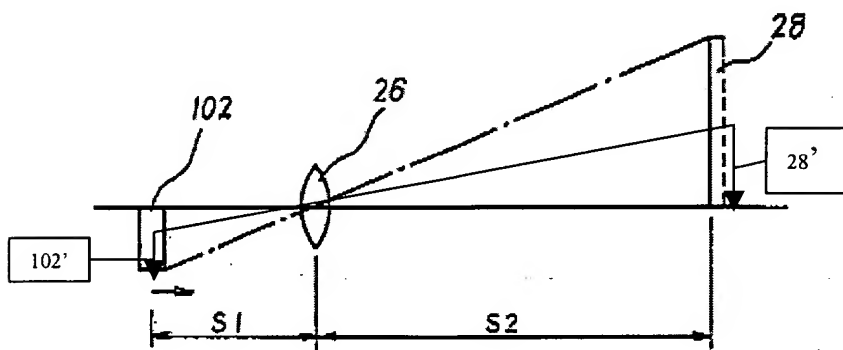
In reference to claims 6 and 20, Yasukawa, in an alternate embodiment discloses the projection unit is capable of wireless communication with the information source (Fig. 46 shows the image information source 81 wireless connected with head up display 2 via antenna 201 and 202; col. 25, lines 17-23).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the wireless communication for the projection unit (2) for allowing the image source (3) to be handheld easily in its use and significantly simplifying the removal and mounting of the display device in the image source (col. 8, line 67 through col. 9 line 3).

In reference to claim 9, Yasukawa discloses a size of the virtual screen is a function of a focal length of line of the projection unit (Fig. 26-27; col. 19, lines 30-40).

In reference to claim 10, as shown in modified of Fig. 26, given the distance S1 and S2 held constant, the size of the virtual screen 28' is proportional (i.e. is a function) to the size of the display 102' as provided below.

FIG. 26



It would have been obvious for one of ordinary skill in the art to recognize (in the modified Fig. 26) that the size of virtual screen (28') is a function of a size of an image-forming panel (102') of the projection unit and the larger size of the display 102 provides larger virtual screen virtual screen 28.

In reference to claim 12, Yasukawa discloses in an alternate embodiment, the projection unit (2) is battery powered (col. 25, lines 21-23).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the battery for the projection unit so that the projection unit has its own power source for operating when the projection unit used in wireless communication with the information source.

In reference to claim 15, Yasukawa discloses wherein the projection unit (2) is adapted to receive data from a transmitter (transmission circuit 99) that is integral with the information source 99 (Fig. 46-47 show the transmission circuit 99 in integral with the information source 81).

In reference to claim 16, Yasukawa does not disclose the projection unit is adapted to receive data from a transmitter that is separate from the information source.

However, absent a showing of critically and/or unexpected result, it would been obvious to one of ordinary skill in the art to separate the transmitter from the information source as desired as was judicially recognized with *Nerwin v. Erlichman*, 168 USPQ 177, 179 (PTO Bd. of Int. 1969), which recognizes that make separable of well known element is normally not desired toward patentable subject matter.

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6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yasukawa in view of in view of Preston (U.S Patent No 6,094,283).

In reference to claim 7, Yasukawa does not disclose the aspect ratio of the data displayed by the projection unit is 4:3. Preston discloses a head mounted display unit having a projection unit (26,28) capable of displaying data with an aspect ration of 4:3.

It would have been obvious for one of ordinary skill in the art at the time of the invention to recognize the typical computer monitor has an aspect ratio 4:3 as well known and widely used to display image for computer applications on projection unit in head up display technology as disclosed by Preston (col. 1, lines 30-38)

7. Claims 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yasukawa in view of Hori et al. (5,072,209), hereinafter Hori.

In reference to claim 14, Yasukawa does not disclose the projection unit is a solar powered. Hori discloses a projection unit of a head up display powered by a solar cell. (Fig. 4, lines 2-5).

It would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the solar powered system in the projection unit of Yasukawa as taught by Hori in order to achieve the benefit of saving time and labor to charge the battery separately (col. 4, lines 20-25).

8. Claims 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yasukawa in view of Kato et al. (U.S Patent No. 5,497,170), hereinafter Kato

In reference to claim 17, Yasukawa does not disclose a heat deflector for the spectacles unit. Kato discloses a heat deflector 20 for a head-up display having a projection unit 19 with a heat-dissipating member 20 to dissipate heat for the display (Fig. 17; col. 9, lines 65-67 and col. 10, lines 1-4).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the dissipating member 20 to dissipate the heat of the display system of Yasukawa as taught by Kato in order to achieve the benefit of preventing thermal deformation or break other members of the projection unit which could occur if they were subjected to the infrared rays (col. 10, lines 5-10 of Kato).

9. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasukawa in view of Mann (U.S Patent No. 6,307,526).

In reference to claim 3, Yasukawa does not disclose the information source is a television set, and wherein the projection unit is adapted to display data from the television set.

Mann discloses a pair of spectacles (eye-glasses 100) having a projection unit (105) adapted to display data from a television set 160 (television 160 in Fig. 1 contains television tuner; col. 12, lines 55-60).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the television set as the display of the projection unit of Yasukawa as taught by Mann because it would provide users a combined display system not only capable of displaying data from computer for working but also providing video program from the television for entertaining.

In reference to claim 11, Yasukawa does not disclose the projection unit is configured to possess a resolution of at least 640 X 480 pixels.

Mann discloses the display screen of the projection unit possesses a resolution 640 x 480 pixels (col. 14, lines 28-32).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the display screen having 640 x 480 pixels in the device of Yasukawa as taught by Mann in order to achieve the benefit of providing clear and sharp images on the virtual screen using small display device.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DUC Q DINH whose telephone number is (571) 272-7686. The examiner can normally be reached on Mon-Fri from 8:00.AM-4:00.PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair->

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direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DUC Q DINH
Examiner
Art Unit 2674

A handwritten signature in cursive script, appearing to read "Duc Q Dinh".

DQD
April 1, 2006